

REMARKS/ARGUMENTS

Responsive to the Office Action dated October 3, 2006, Applicants have filed this Amendment in which claims 1, 2, 14, and 28 have been amended. Claims 1, 2, 4-12, 14-22, 27, and 28 are pending for prosecution. Claims 1, 14, and 28 are independent.

I. Principles of Compact Prosecution

According to § 2106 of the MPEP, principles of compact prosecution dictate that the Examiner should state all reasons and bases for rejecting claims in the first Office Action. Applicants fully appreciate that it may not be possible for the Examiner to state all reasons and bases for rejecting claims in the first Office Action when one or more claims are amended during prosecution. Applicants respectfully submit that the claims of the instant application have not been amended during prosecution in a manner that would provide any basis for rejecting claims 1-2, 4-12, 14-22, 27, and 28 under 35 U.S.C. § 101 that was not present at the time the application was filed. Accordingly, Applicants respectfully object to the untimely nature of the rejection of the aforementioned claims under 35 U.S.C. § 101 as being inconsistent with principles of compact prosecution.

II. The § 101 Non-Statutory Subject Matter Rejection

Claims 1-2, 4-12, 14-22, 27, and 28 stand rejected under 35 U.S.C. § 101 as being directed to non-statutory subject matter. According to pages 2 and 3 of the Office Action dated October 23, 2006, "claims 1, 14, 17 and 28, these claims merely apply some descriptive operational steps to produce an output of abstract ensemble (or clustering) algorithms, however, because the output is not stored or displayed to yield some real world value, therefore, the claimed invention as a whole does not produce a 'useful, concrete and tangible' result." Applicants respectfully traverse.

In an effort to advance prosecution, however, Applicants have amended claims 1, 14, and 28 to recite “storing the output of said ensemble of algorithms” for claim 1, “means for storing said relationship links and said relationship link weights” for claim 14 and “storing the output of said ensemble of clustering algorithms” for claim 28. Therefore, the claims have been amended so that results of the recited steps are stored, thus satisfying the requirement to “yield some real world value.” Applicants respectfully submit that the rejection has been overcome and request that the rejection be withdrawn. Claims 2, 4-12, 15, 16, 18-22, and 27 depend from their respective base claims and are allowable for at least the same reasons.

III. The § 112 First Paragraph Rejection

Claims 1-2, 4-12, 14-16, 17-22 and 27- 28 stand rejected under 35 U.S.C. § 112 first paragraph “as failing to comply with the written description requirement.” Claims 1, 14, and 28 have been amended. In light of these amendments and for at least the following reasons, Applicants respectfully request reconsideration and withdrawal of this rejection.

Page 4 of the Office Action states “[a]s to claims 1, 14 and 28, the claimed limitation ‘without forming a probabilistic predictive model system’ is new, because applicant fails to defined what is the meets and bounds of the claimed ‘a probabilistic predictive model system’ and how to make the claimed ‘an information retrieval without forming a probabilistic predictive model system’ . . .” Claims 1, 14, and 28 have been amended to remove the phrase “without forming a probabilistic predictive model” from the language of the claims. In view of the aforementioned amendment to claims 1, 14, and 18, Applicants respectfully request withdrawal of this rejection. Claims 2, 4-12, 18-22, and 27 depend from amended independent claim 1 and are allowable for at least the same reasons. Claims 15 and 16 depend from amended independent claim 14 and are allowable for at least the same reasons.

Claim 14 has also been amended to include the phrase “having a network structure which allows cycles” in the preamble of the claim. It will be appreciated that this amendment is fully supported by the specification including numbered paragraph 42.

Applicants respectfully, yet vigorously, disagree with the following statement from page 4 of the Office Action, “. . . *for the purpose to expedite the prosecution of instant application, the Office regards any information retrieval system in the database art that performs data classification modeling reads the claimed subject matter.*” Applicants submit that the above statement mischaracterizes the character of the claimed invention as being directed to data classification **modeling**. Furthermore, if the above characterization were allowed to stand unchallenged, it might have the net effect of providing the basis for improper importation of a claim limitation when such limitation is not recited in the claims.

It should be noted that Applicants have amended claims 1, 14, and 28 to remove the phrase “without forming a probabilistic predictive model” from the language of the claims in an effort to expedite prosecution of the application. To be abundantly clear to all, Applicants removal of this phrase from the language of the claims does not represent an admission in any way, shape, or form that the invention does involve an unstated / implied step of forming a predictive probabilistic model.

IV. The § 112 Second Paragraph Rejection

Claims 1-2, 4-12, 14-22, 27, and 28 stand rejected under 35 U.S.C. § 112 second paragraph “as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.” Claims 1, 2, 14, and 28 have been amended. Amended claims 1, 14, and 28 are independent. Claims 2, 4-12, 18-22, and 27 depend from amended independent claim 1. Claims 15 and 16 depend from amended independent claim 14.

In light of these amendments and in view of the following remarks, Applicants respectfully request reconsideration and withdrawal of this rejection.

According to page 5 of the Office Action, “[a]s to claims 1, 14, 17, and 28, applicant fails to define metes and bounds of the claimed ‘the output of said ensemble of algorithms’ or ‘the outcome of said ensemble of algorithms’, as such, it renders the claimed subject matters to be indefinite.” Applicants respectfully disagree. The specification of the instant application fully supports and makes definite all recited claim terms and steps. Examples of output for the ensemble of algorithms can be found throughout the specification including numbered paragraphs 42 through 50 and figures corresponding to same.

The steps recited by amended claim 1 are fully described throughout the specification including in FIG 4A and in numbered paragraphs 0045 through 0050. For example, according to paragraph 0046, “a cluster of algorithms is applied to determine if a relationship between the two or more informational items can be found.” Paragraph 0048 provides that for “any relationships were found in the previous step . . . a strength is assigned to the relationship link 406.”

Further descriptions and support for the steps recited in amended claim 1 can be found throughout the specification including numbered paragraph 0042 which states “[t]he merging of the algorithm outputs in step 303, initially serves the purpose of allowing a certain weight or strength value to be associated with a particular relationship link . . . [t]he **weight or strength assigned to a particular link is directly proportional to the total number of individual algorithms at step 302A-302D that determine the existence of a relationship link between individual informational items. . .**” [Emphasis added]

The above referenced portions of the written description clearly demonstrate that the steps recited in amended claim 1 are fully supported by the specification. Thus, for at least the

aforementioned reasons Applicants respectfully request reconsideration and withdrawal of the instant rejection to amended claim 1. Additionally, it is requested that the rejection to claims 2, 4-12, 17-22, and 27 be withdrawn as these claims depend from amended claim 1 and are also fully described and supported by the specification.

The elements recited by amended claim 14 are fully supported and described throughout the specification, thus there is no basis for a § 112 second paragraph rejection. See generally numbered paragraphs 0034 through 0042 and 0045 through 0050 (and associated FIGs). For at least the aforementioned reasons, Applicants respectfully request withdrawal of the rejection to amended claim 14. Claims 15 and 16 depend from amended claim 14 and are fully supported by the specification as well. Thus, the withdrawal of the rejection of claims 15 and 16 is requested as well.

Claim 28 has been amended to remove the phrase “wherein the informational retrieval system may be a Baysean or a non-Baysean system.” Accordingly, the withdrawal of the rejection of claim 28 is requested.

Moreover, Applicants respectfully object to the following statement from page 5 of the Office Action, “[f]or the purpose to expedite the prosecution of instant application, the Office regards the claimed system as a ‘Baysean’ system.” Applicants submit that this statement grossly mischaracterizes the claimed invention as being limited to a Bayesian system. In fact, the above mentioned statement directly contradicts evidence to the contrary which is set forth in several authoritative sources (including the specification of the instant application) in which a number of distinctions between a probabilistic Bayesian system and the claimed invention are provided.

For example, the Examiner is respectfully directed to Applicants' extensive series of remarks with support from the specification that aspects of the claimed invention are directed to a Bayesian-type system as opposed to a probabilistic Bayesian system, that have been made in nearly all of the Applicants' previous responses to Office Actions, including but not limited to Applicants' responses to the Office Actions of May 17, 2005 and January 20, 2006. The Examiner is also respectfully directed to where the Examiner has previously quoted the specification of the instant application in acknowledging distinctions between Applicants' claimed invention and a Bayesian network. One such distinction recognized by the Examiner is ". . . a network structure which allows cycles" which is clearly distinct from the acyclic structure of a Bayesian network. Thus, Applicants note their objection to the above characterization so as not to provide any basis whatsoever, for improper importation of a claim limitation that is not recited in the claims.

Furthermore, Applicants object to an additional statement appearing on page 5 of the Office Action, namely "[b]ecause the ambiguous nature of instant invention, the following art rejection is to the best that the examiner is able to ascertain." This statement regarding "the ambiguous nature of instant invention" is clearly not confined or directed to any particular claim. Thus, it is unclear to the Applicants how this statement is relevant to the prosecution of the instant application. In fact, such stray statements can only serve to retard prosecution of the instant application by introducing ambiguity into the prosecution record. Applicants respectfully requests that this statement be withdrawn by the Examiner.

For at least the aforementioned reasons Applicants respectfully request withdrawal of the rejection under 35 U.S.C. § 112 second paragraph of claims 1-2, 4-12, 14-22, 27, and 28.

V. The § 103 Rejection over Horvitz et al in view of Wical

Claims 1-2, 4-12, 14, 15, 17, 19-22, 27, and 28 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Horvitz et. al (U.S. Patent No. 6,182,133) in view of Wical (U.S. Patent No. 5,904,821). Claims 1, 2, 14, and 28 have been amended. Claims 1, 14, and 28 are independent. In view of these amendments and for at least the following reasons, Applicants respectfully request reconsideration and withdrawal of this rejection.

The Examiner bears the initial burden of factually supporting any prima facie conclusion of obviousness. *MPEP* §2142. To establish a prima facie case of obviousness, three criteria must be met. First, there must be some suggestion or motivation, to modify the references or to combine reference teachings. Second, there must be reasonable expectation of success. Finally, the prior art must teach all the claim limitations. *MPEP* §2142. The teaching or suggestion to make the claim combination and the reasonable expectation of success must both be found in the prior art, and not based on applicants' disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). Applicants respectfully submit that a prima facie case of obviousness can not be established because both Horvitz and Wical, individually and in combination, fail to teach or suggest the claimed invention.

The Horvitz Reference

The Horvitz reference discloses a system that “harnesses available computer resources during periods of low processing activity and low network activity, such as idle time, for prefetching, e.g., **web pages**, or pre-selected portions thereof, into local cache of a client computer.” [See Horvitz abstract, emphasis added]. According to the Horvitz system, a user enters a website address URL (Uniform Resource Locator) into a web browser which loads the

web page associated with the first URL (Horvitz somewhat interchangeably uses URL, hotlink, link, hyperlink, and hypertext link). The user then clicks on a hyperlink/hotlink of another web page or website contained somewhere on the first web page. In an effort to minimize web page load times the Horvitz system predictably prefetches web pages that the user **may** want to visit next in the background by tracking the URL addresses entered or selected by the user (via hotlinks). The tracked URL's and hotlinks are given a "transition probability" which Horvitz describes in column 24, line 50 – column 25, line 10 as:

This model specifies for a given web page, in terms of its URL, a set of successive web pages (one or more and in terms of their URLs) to which the user is likely to next transition, i.e., visit next, and for each such page a numeric probability (hereinafter a "transition" probability) that the user will select that **particular page**. For a given user, this model is probabilistic in nature, such as, e.g., a Bayesian network or a special class of general probabilistic models, such as a Hidden Markov model, which encodes past preferences of that user in terms of conditional probabilities of transitioning to a given URL given the page (s)he is presently viewing. This set and the transition probability associated with each **URL** therein are collectively supplied, as symbolized by line 615, to page transition predictor 630. **The predictor, given these probabilities, ranks the URLs in the set and then supplies these URLs, rank ordered in descending order of their transition probabilities, to URL retrieval component and data receiver 650.** [Emphasis added]

It should be clearly understood that Horvitz specifies that his "techniques" and "teachings" uses a "user" model. Thus, Horvitz describes a system that requires a user model and states that such a user model is probabilistic.

The Wical Reference

The Wical reference discloses a knowledge base search and retrieval system, which includes factual knowledge base queries and concept knowledge base queries. Wical discloses

the concept of a distance weight which, in one embodiment, associations have distance weights ranging from 1-10. See col. 12, lines 44-55.

Remarks

For at least the above stated reason, and for the reasons set forth in prior responses, applicant's method/system does not use probabilities or conditional probabilities. The claimed invention does not form user models nor does the claimed invention include any step involving predictions or making predictions. To the contrary, Amended claim 1 of the Applicants' claimed invention includes steps involving identifying a first informational item, identifying a second informational item, applying an ensemble of algorithms to determine an integer-weight relationship link between said first and second informational items, detecting access to informational items and establishing relatedness strengths by using integer-value weight through comparing document similarity in the manner described and claimed.

The Horvitz reference does not disclose, teach or suggest the steps of "identifying a first informational item, identifying a second informational item, applying an ensemble of algorithms to determine an integer-weight relationship link between said first and second informational items" as recited by claim 1. It will be appreciated that the aforementioned steps involve steps that are performed on the data **independent** of any user actions. Horvitz does not disclose, teach, or suggest a system or method in which clustering operations via multiple algorithms are performed on data.

Another exemplary difference is one of granularity in that the URL / address is the only unit that is examined in the Horvitz system whereas a benefit of the "informational items" recited in claims 1, 14, and 28 is that it is possible to address units of variable granularity. The Horvitz reference arguably discloses informational items, however, Horvitz does not disclose, suggest or

teach the steps of “**detecting an access** of a first informational item” and “**detecting an access** of a second informational item.” Applicants disagree that the step of detecting an access of said first informational item is disclosed, taught, or suggested by “the Web Server Application Programs” or that the step of detecting an access of said second informational item is disclosed, taught, or suggested by “the Browser Application Program” as stated on page 6 of the Office Action.

Amended claim 14 provides “[a]n apparatus for providing classification of informational items in an information retrieval system having a network structure which allows cycles.” By this point in the prosecution of the instant application, it has been established that the Horvitz reference teaches use of probabilistic user modeling and that probabilistic user modeling is acyclic. Amended claim 14 is clearly directed to a network structure which allows cycles and does not involve a probabilistic network. As to the rest of claim 14, the Horvitz reference fails to disclose, teach or suggest the element of “means for establishing the existence of relationship links between said informational items to enhance the effectiveness of said information retrieval system.” It will further be appreciated that by extension, the Horvitz reference fails to disclose, teach or suggest the step of “establishing that a relationship link exists between said first informational item and said second informational item” as recited in claim 28.

The “rank ordering” using server log data of the Horvitz reference for providing a list of URLs of the most frequently visited web pages on a server does not teach, suggest or disclose the step of “determining an integer-value weight based on the historical frequency of said relationship link” as recited by claim 1. Furthermore, even if the Wical reference does disclose an information retrieval system with weights expressed in integers, as stated on pages 7 and 8 of the Office Action, the basis for the obviousness assertion based on the combination fails because

the Horvitz reference fails to provide, disclose, teach, or suggest **all** of the missing claim steps/elements.

Horvitz describes tracking URLs in logs as follows:

For a given user, the user **model** can be, e.g., **a simple rank ordering of URLs based on log data of page transitions** across all individuals who visit a given web site containing those pages or a Bayesian **model** of the preferences of that user encoded in terms of, e.g., numeric conditional probabilities, of selecting, e.g., given a displayed page, other pages. This **model** can reside in a web server, a client or across both.

The Horvitz reference does not disclose, teach or suggest performing any operation on relationship links, much less determining an integer value weight. It will be appreciated by one of skill in the art that adding a URL to a history log (on the browser) or adding a URL to a server access log does not describe, suggest or teach the step of “determining an integer-value weight based on the historical frequency of said relationship link” as recited in claim 1.

Accordingly the Horvitz reference fails to disclose, teach or suggest the element of “means for weighting said relationship links, said weight being directly proportional to the outcome of said ensemble of algorithms” as recited in claim 14. It will further be appreciated that by extension, the Horvitz reference fails to disclose, teach or suggest the step of “determining an integer-value weight based on the historical frequency of said relationship link” as recited in claim 28.

Finally, the Horvitz reference does not disclose, suggest, or teach the step of “applying an ensemble of algorithms to said first and second informational items in direct proportion to said integer-value weight of said relationship link” as recited by claim 1 because the Horvitz reference does not disclose, suggest, or teach a “relationship link” for the reasons already discussed. Additionally, it will be appreciated that without a relationship link, it is not possible

to “determining an integer-value weight” for same. Accordingly the Horvitz reference fails to disclose, teach or suggest the step of “applying an ensemble of clustering algorithms directly proportional to said integer-value weight of said relationship link” as recited in claim 28.

Page 10 of the Office Action states, “[a]s to claims 14-22, these claims recited the same features as claims 1-12 and 27 in form of computer apparatus or a readable storage medium product, hence are rejected for the same reason.” This is not correct. There are numerous differences between independent claim 14 and claim 1. For one thing, unlike claim 1, claim 14 does not recite a step / means involving determination of a relationship link weight based on historical frequency. Thus, page 10 of the Office Action does not provide a basis, much less a sufficient basis for rejecting claims 14-22 under 35 U.S.C. § 103. For this reason, Applicants respectfully request withdrawal of the standing rejection to claims 14-22.

For at least the aforementioned reasons Applicants respectfully request withdrawal of the rejection under 35 U.S.C. § 103 of claims 1, 14, and 28. Claims 2, 4-12 depend from claim 1 and are allowable for at least the same reasons. Claims 15, 17, 19-22, and 27 depend from claim 14 and are allowable for at least the same reasons. Therefore, Applicants respectfully request withdrawal of the standing rejections.

Piecemeal Examination

Under MPEP § 707.07(g), piecemeal examinations should be avoided. Applicants respectfully submits that the Examiner is impermissibly conducting a piecemeal examination by keyword hits and has repeatedly failed to address Applicant’s arguments. It is stated on pages 9 and 10 of the instant Office Action that “[t]he examiner disagrees with applicant's arguments and piecemeal interpretation that ‘Horvitz is clearly a predictive system based on counting clicks whereas the Wical teaching are more information centric.’” With respect, Applicants have

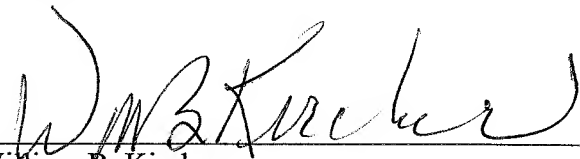
clearly pointed out that there has been a disconnect in the Examiner's assertions regarding what aspects of the claimed invention are disclosed in the Horvitz reference. In short, the Examiner may not make the assertion that an URL discloses a "relationship link" in one instance, and then make the inconsistent assertion that the URL also discloses an "information item". The URL of the Horvitz reference is either one or the other.

Conclusion

Applicants respectfully submit the claims are in condition for formal allowance which is courteously solicited. If any issue regarding the allowability of any of the pending claims in the present application could be readily resolved, or if other action could be taken to further advance this application such as an Examiner's amendment, or if the Examiner should have any questions regarding the present amendment, it is respectfully requested that the Examiner please telephone Applicants' undersigned attorney in this regard. Should any fees be necessitated by this response, the Commissioner is hereby authorized to deduct such fees from Deposit Account No. 11-0160.

Respectfully submitted,

Date: 4/3/2007



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